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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/008,947	01/20/1998	RANDELL L. MILLS	911322US	6830
7590	04/14/2004		EXAMINER	
FARKAS & MANELLI 2000 M STREET, N.W. 7TH FLOOR WASHINGTON, DC 200363307			KALAFUT, STEPHEN J	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/008,947	MILLS, RANDELL L.	
Examiner	Art Unit		
Stephen J. Kalafut	1745		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 07 January 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2,4-6 and 10-59 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1, 2, 4-6, 10-59 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/7/2004.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____ .

Claims 1-2, 4-6 and 10-59, for reasons of record, are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. See paper no. 17, paragraph no. 3.

Claims 1-2, 4-6 and 10-59, for reasons of record, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. See paper no. 17, paragraph no. 4.

Applicant's arguments filed 1/7/04 have been fully considered but they are not persuasive.

Applicant requests that the Office consider his rebuttal comments to the paper posted by Peter Zimmerman. This rebuttal (Attachment I) has been reviewed, but does not address the point made in the previous office action, that a beam of moving electrons, all behaving as theorized by applicant, would have their spin axes all polarized in the same direction, while in reality, electron beams most commonly exhibit random polarization, i.e., their spin axes do not all line up with their direction of motion. While applicant faults the Zimmerman paper as not being peer-reviewed, which may be true, the cited section refers to applicant's own book, and thus only considers the implications of applicant's own theory. In the January 2000 edition of *The Grand Unified Theory of Classical Quantum Mechanics*, the cited section appears on pages 100 through 113. It is noted that the Zimmerman paper is also cited in the attached Appendix.

Applicant points out that his theory predict a “new ground state”, defined by the radius of the electron “orbitsphere”, which occurs where the speed of the electron, which increases with the increasing p value, would be limited by the speed of light. This is not persuasive because applicant applies Lorentzian transformations for inertial frames to the electron, which is not an inertial frame. See the attached Appendix, starting at the bottom of page 14.

Applicant faults Krieg, stating that Krieg relies on Feynman, and argues that the angular momentum of the electron “from the SE is zero”, not Planck’s constant as argued by Feynman. This is not persuasive because the calculation shown by Krieg does not deal with angular momentum, but simple momentum, as given by the formula $p=mv$. Also, Krieg does not allege that the electron cannot move closer to the nucleus than the Bohr radius, only that the spherical location defined by the Bohr radius is the place where an electron will have it minimum energy. Also, in order for electron angular momentum to be zero, its speed around the nucleus would have to be zero (since an electron has mass, and thus angular momentum is proportional to angular velocity). This contradicts applicant’s position that an electron would have increasing speed with increasing p values, since this position implies that the electron is in motion around the nucleus, and thus has angular momentum. It is noted that Krieg lists three references at the end of his article, none of which were written by Feynman.

Applicant faults the Office position that “faster than light travel has been proven”. The Office does not take the position that faster than light travel has been proven, or is even possible. The office position is that under certain conditions, faster than light *influences* are possible, according to Dennis (“Hidden Variables...”), cited in paper no. 40, as reference “U” on the first page of the PTO-892 attached thereto.

Applicant argues that the various technologies mentioned by Tegmark *et al.* do not necessarily depend on the probability wave equations for their existence, and fault Tegmark *et al.* co-author Wheeler for relying on the human mind to collapse the quantum wave function to make these things, and the universe itself real. The Office does not adopt Wheeler's belief that the human mind makes these things real, but only that the phenomena underlying these inventions are understandable according to quantum mechanics.

Applicant argues that excited states are caused by release of power, in a combustion flame and in his plasmas, in the latter case, the power being released by hydrogen atoms collapsing to form hydrinos. This assumes that a hydrogen atom has more energy than the surrounding plasma components, thus enabling energy transfer from the hydrogen to these other components. It is unclear how an electron in a hydrogen atom, at n=1, has more energy than the electrons of ionized atoms, or the electrons which have been removed therefrom.

Applicant asks for a reason why he is required to submit peer-reviewed evidence, while the PTO is not. Applicant is alleging a long-accepted scientific idea is incorrect, and thus bares the burden of providing evidence convincing to the scientific community, while the Office does not have the experimental capability to prove or disprove the theories which underlie inventions, and thus must rely on scientific principles which are known and accepted. The one article cited by the Office which does not appear to be peer-reviewed is that by Zimmerman, which is cited only for a small section which considers the macroscopic consequences of applicant's theory, pertaining to an electron beam, and which has not been rebutted.

Applicant note the involvement of Examiner Bernard Souw in the examination of another of his applications, and that Examiner Souw had previously worked for Brookhaven National

Labs. Two things are thus pointed out. First, examiners are allowed, and even encouraged, to consult other examiners on matters of science. Dr. Souw is the author of the attached Appendix. While originally written for Serial No. 09/513,768, the Appendix is considered relevant to the present application for reasons stated below. Second, the employment history of examiners, including those acting in a consulting role, is irrelevant to the examination thereof, except where there is a genuine conflict of interest.

Applicant argues that the various articles attached to the response of 1/7/04 support his contention that hydrogen can exist in states below the “ground state”, where the electron has a fractional, rather than an integral, quantum number. These attachments are not persuasive for the following reasons:

- 1) They have not been peer reviewed, or published, but only submitted, so they do not (yet) have the credibility that peer reviewed articles have. To this category belong attachments 58, 62, 64-66, 68, 70-87, 89 and 91-100.
- 2) They do not deal with the “hydrino”, but other subject matter, such as spectral data for states above n=1, and thus, even if valid, do not pertain to the present invention. To this category belong 59, 65, 66, 80 and 94. To this category also belong the article “Spectroscopic evidence for highly pumped Balmer and Lyman populations in a water-plasma”, by R. Mills and P. Ray, which was submitted with the response, but not listed on the accompanying PTO-1449. It is thus made of record on the enclosed PTO-892.
- 3) They contain data which cannot be accounted for by applicant’s theory. The discrepancy is explained in paper no. 40, pages 4 and 5. To this category belong attachments 60, 63, 70, 71, 73, 75, 76, 78, 79, 81, 86, 87, 89, 90, 98 and 99.

- 4) They speculate hydrino formation as an explanation for experimental data unrelated to and not necessarily caused by hydrinos, such as Balmer line broadening, calorimetric data, or "indications" of hydride chemical bonding. Besides the possible explanations for Balmer line broadening mentioned in paper no. 40, the attached Appendix, on page 5, offers still other reasons for this phenomenon. To this category belong attachments 57, 59-62, 64, 69, 71, 72, 74, 77, 81, 83-85, 89-92, 95-97, 99 and 100.
- 5) They contain misidentifications of spectral lines, as explained in the attached Appendix on pages 3 and 4. Lines alleged by applicant to arise from hydrino formation have been identified as coming from helium or oxygen, the latter as an impurity. To this category belong attachments 60, 61, 67, 69 and 82.
- 6) They are unrelated to the scientific merits of the present invention and only either generally relate to news stories about the PTO and applicant's related applications, or are copies of court cases, a letter to Director Rogan, or other internal documents such as interview summaries. To this category belong 20 attachments which are neither numbered nor listed on the PTO-1449 of 1/07/2004, but which have nonetheless been submitted.
- 7) They have not been found. To this category belong attachments 50-56 and 83, and possibly attachment 93. This is because the attachment 93 which has actually been submitted has a different title than that listed as attachment 93 on the PTO-1449, and instead has the same title as attachment 92. The submitted attachment 93 appears to be a shorter version of attachment 92, and would thus likewise fall into category 4.

Since all the "evidence" presented in attachments 50-100 belongs to at least one of the categories (1) to (7) above, they are all deemed to be incredible, and hence, invalid as

experimental proof for the existence of the hypothetical hydrino, or compound based thereon, or chemical reactor for producing such a compound.

Further indication that applicant's theory is flawed is provided in the attached Appendix, starting at the bottom of page 5. Applicant, in his book, *The Grand Unified Theory of Classical Quantum Mechanics*, has misunderstood that all stationary states are non-radiative, why excited states radiate while the ground state does not, the fundamentals of quantum theory, Haus's non-radiative condition, the distinction between the quantum mechanics eigenfunction and wave function, the uncertainty principle, the concept of spin (which is a property of the electron *per se*, and not of its motion around the nucleus), the hydrogen wave function, and relativistic length contraction (also called Lorentz contraction).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sjk



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